

Meeting of 27 June, 1969, at St. Louis, Mo.

STAT [redacted] STAT
STAT met to discuss the program for use of the [redacted]
STAT [redacted] infra-red optometer for the study of visual problems
STAT related to binocular microscopy.

STAT Initially, [redacted] presented the blue prints for the micro-
scope being built by [redacted] STAT
noted that the adjustment for PD was somewhat clumsy to use if it
involved loosening of three screws on the right eyepiece holder
for each adjustment. Secondly, since the optometer is used on the
right eye, changes of PD involve realignment of the optometer.
An important drawback noted was that the center of rotation of
the eyepieces was not the same as the center of rotation for each
eye, necessitating adjustment of the PD for each convergence
setting. It was recommended that [redacted] STAT
furnish a table giving the appropriate settings of convergence angle for a range
of PDs. A question was also raised that since the distance be-
tween the ocular and eye of the observer was set at 50mm in order
to accomodate the beam splitter of the optometer, the field of
view might be somewhat diminished from that of a normal microscope.

STAT The second topic of discussion was the type of stimulus
material to be used in the experiment and the task to be performed
by the observer. [redacted] suggested the use of a set of stereo
targets which he has used in some of his work on depth discrimi-
nations. The target consisted basically of several rows of cir-
cles which varied in four degrees of brightness and four degrees
of size. Within each row is one circle which stands out from the
rest. The subjects' task is to identify that circle. [redacted] STAT
noted that the time of the subject's task could be extended by
requiring him to trace patterns of a particular brightness or
size or a combination thereof. Thus accommodation could also be
studied under different degrees of task load.

STAT [redacted] suggested that perhaps a [redacted] target
could be employed as an additional stimulus. Since the target
varies by diminishing line width on one dimension and contrast
on the other, acuity of the subject can be inferred from the sub-
ject's report of where on each dimension resolution is lost. STAT

The next consideration involved the general design of the
experiment. It was agreed that the primary independent variables
should be the amount of convergence induced and the task loading.

Effects of long term viewing i.e., over thirty minutes per
session was deferred as a variable because of the limited time
available for use of the optometer and the somewhat constrained

-2-

position (bite bar) of the subject which is unlike the normal condition of microscopy. It was further agreed that the subject population should consist of young people with normal color vision and no uncommon refractive errors, although uncorrected 20/20 vision is not required. These subjects will have lenses equivalent to their prescription fitted into the eyepieces of the microscope. [] felt that the individuals concerned with the carrying out of the experiment could be utilized for tests on mildly presbyopic observers. Secondly, he recommended that all potential subjects have optometric examinations which would include cycloplegic and manifest refraction, and the determination of phorias and fusional reserves.

STAT

An ancillary experiment was discussed which would determine the validity of the laser refraction technique for the study of accommodation. It was felt it would be necessary to determine not only the correlation between the laser and optometer methods but also if the presence of the laser spot in the subjects' field of view would itself elicit an accommodative response. The method would generally involve introduction of the laser target through the eyepiece of the left eye while monitoring the right eye with the optometer. In the event that the optometer is available at night, it was felt that the main experiment should be performed during the day and the laser experiments in the evening.

[] indicated that he would draw up a tentative schedule for the experiment and distribute it to the participants for comments. Since [] will be available only for the first two days, the general procedure of preliminary testing will be done during this period. The remainder of the week would be devoted to investigation of the most interesting problems which arise during the first two days. It was thought that this somewhat flexible approach will prove to be more useful than a completely a priori design.

STAT
STAT

STAT